

WHAT IS CLAIMED IS:

- 5 1. A pharmaceutical composition comprising at least one peptide or derivative thereof,
wherein said polypeptide or derivative thereof is capable of specific binding with the high
affinity VEGF receptor-1 or a derivative of the VEGF receptor-1 and structural similar
receptors.
- 10 2. A pharmaceutical composition according to claim 1 wherein said polypeptide or
derivative thereof comprises the following motif of SEQ. ID. NO.: 8:
Y₁-X-X-Y₂-Y₃-Y₄-X-X-X-Y₅-X-X-X-X-X-Y₆, where
Y₁ is Asn or Gln
Y₂ is negatively charged amino acid comprising of Glu or Asp
Y₃ is Ile, Leu, Val or Met
15 Y₄ is negatively charged amino acid comprising of Glu or Asp
Y₅ is aromatic amino acid comprising of Trp, Phe, Tyr or His
Y₆ is aromatic amino acid comprising of Tyr, Trp, Phe or His
X is any amino acid,
or a substitution variant, addition variant or other chemical derivative thereof.
- 20 3. A pharmaceutical composition according to claim 1, wherein said polypeptide or
derivative thereof comprises the amino acid sequence of SEQ. ID. NO.: 1.
- 25 4. A pharmaceutical composition according to claim 3, wherein derivatives of said SEQ. ID.
NO.: 1 comprises oligopeptides, chemical derivatives or peptidomimetic that are capable
of specific binding with the high affinity VEGF receptor-1 or a derivative of the VEGF
receptor-1.
- 30 5. A pharmaceutical composition according to claim 1, wherein said polypeptide or
derivative thereof comprises the amino acid sequence of SEQ. ID. NO.: 2.
6. A pharmaceutical composition according to claim 1, wherein said polypeptide or
derivative thereof comprises the amino acid sequence of SEQ. ID. NO.: 3.

7. A pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof comprises the amino acid sequence of SEQ. ID. NO.: 4.
8. A pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof comprises the amino acid sequence of SEQ. ID. NO.: 5.
9. A pharmaceutical composition according to claim 1, wherein said peptide or derivative thereof comprises the amino acid sequence of SEQ. ID. NO.: 7.
10. The pharmaceutical composition according to the claim 1, where said polypeptide or derivative thereof modulates the interaction of VEGF with its high affinity VEGF receptor and modulates biological effects mediated by binding.
11. The pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof comprises at least about 20% of the biological activity of the peptide or derivative thereof said SEQ. ID. NO.: 3 and binding activity such that said peptide or derivative thereof competes with the labeled peptide in SEQ. ID. NO.: 4 for binding to the VEGF receptor-1.
12. The pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof comprises at least about 20% of the biological activity of the polypeptide or derivative thereof said SEQ. ID. NO.: 3.
13. The pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof comprises binding activity such that said polypeptide or derivative thereof competes with the labeled polypeptide in SEQ. ID. NO.: 4 for binding to the VEGF receptor-1.
14. The pharmaceutical composition according to claim 11, wherein said biological activity is measured using *in vitro* bioassays comprising VEGF receptor-1 binding assay, endothelial tube formation on Matrigel.RTM., or endothelial cell mitogenic assay.
15. The pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof further comprises a biological agent.

16. The pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof further comprises a carrier.

5 17. The pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof further comprises a biological agent and a carrier.

18. The pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof further comprises a modified biological agent.

10

19. The pharmaceutical composition according to claim 1, wherein said polypeptide or derivative thereof further comprises a therapeutic agent.

15

20. A method of treating a disease associated with angiogenesis in a patient in need of such therapy comprising administering to said patient an effective amount of said pharmaceutical composition of claim 1 and a pharmaceutical acceptable carrier.

20

21. An isolated nucleic acid encoding the polypeptide or derivatives thereof comprising amino acid sequences of SEQ. ID. NOs.: 1, 2, 3, 4, 5, 7 or 8.

22. An expression vector comprising the nucleic acid sequences of claim 21.

23. A host cell transfected with the expression vector of claim 22.

25

24. A composition comprising a nucleic acid molecule and carrier, wherein the nucleic acid molecule encodes a polypeptide encoding the amino acid sequence of SEQ. ID. NOs.: 1, 2, 3, 4, 5, 7 or 8.

add
add
Add C4
B